

BS 4504 Circular Flanges - General

Dimensions and Tolerances

Dimension	Range	Tolerance	
		mm	
Flange Facings (see page 8-63)	Eccentricity of machined facing diameters	≤ DN 100 > DN 100	1.0 2.0
	a (type B facing height)	2 mm	+0, -1.0
		3 mm	+0, -2.0
		4 mm	+0, -3.0
		5 mm	+0, -4.0
		6 mm	+0, -5.0
	b (type C and E facing height)	All	+0.5, -0
	b (type G facing height)	All	+0, -0.5
	b (type H facing height, outer)	All	+0.2, -0
	c (type D and F facing height)	All	+0, -0.5
	d (type H facing height, inner)	All	+0.5, -0
B and E (facing diameters)	All	+0, -0.5	
C and D (facing diameters)	All	+0.5, -0	
Surface Finish	Facing types A, B, E and F	All, turning All, other than turning	Ra = 3.2 μm min 12.5 μm max Ra = 3.2 μm min 6.3 μm max
	Facing types C, D, G and H	All	Ra = 0.8 μm min 3.2 μm max
Flange Drilling Details (see page 8-64)	B (diameter of bolt circle)	Bolt sizes M10 to M24 Bolt sizes M27 to M45	±0.9 ±1.4
	Centre to centre of adjacent bolt holes	Bolt sizes M10 to M24 Bolt sizes M27 to M45	±0.45 ±0.7
All	A (outside diameter)	≤ DN 150	±2.0
		> DN 150 ≤ DN 500	±3.0
		> DN 500 ≤ DN 1200	±5.0
		> DN 1200 ≤ DN 1800	±7.0
		> DN 1800	±10.0
	C (flange thickness, machined on both faces)	≤ 18 mm thickness	±1.0
		> 18 mm < 50 mm thickness	±1.0
	C (flange thickness, machined on front face)	≤ 18 mm thickness	+2.0, -1.0
> 18 mm < 50 mm thickness		+4.0, -1.5	
	> 50 mm thickness	+7.0, -2.0	
Weld Neck Flanges, Code 111 (see page 8-66)	B (outside diameter of hub at welding end)	≤ DN 125	+3.0, -0
		> DN 125 ≤ DN 1200	+4.5, -0
		> DN 1200	+6.0, -0
	F (hub diameter)	≤ DN 50	+0, -2.0
		> DN 50 ≤ DN 150	+0, -4.0
		> DN 150 ≤ DN 300	+0, -6.0
		> DN 300 ≤ DN 600	+0, -8.0
		> DN 600 ≤ DN 1200	+0, -10.0
D (length through hub)	≤ DN 80	±1.5	
	> DN 80 ≤ DN 250	±2.0	
	> DN 250	±3.0	
Slip on, Code 112 (see page 8-68) and Threaded, Code 113 (see page 8-69) Flanges	E (slip on flange hub diameter) B (threaded flange hub diameter)	≤ DN 50	+1.0, -0
		> DN 50 ≤ DN 150	+2.0, -0
		> DN 150 ≤ DN 300	+4.0, -0
		> DN 300 ≤ DN 600	+8.0, -0
		> DN 600 ≤ DN 1200	+12.0, -0
		> DN 1200 ≤ DN 1800	+16.0, -0
		> DN 1800	+20.0, -0
	B (slip on bore diameter)	≤ DN 100	+0.5, -0
		> DN 100 ≤ DN 400	+1.0, .0
		> DN 400 ≤ DN 600	+1.5, .0
	> DN 600	+3.0, -0	
Blank Flanges, Code 105 (see page 8-70)	D (length through hub)	Same as Weld Neck D	
	B (flange thickness)	Same as C for all other flanges	
	C (unmachined centre portion)	Maximum specified	